

CLAIMS:

1. A process for preparation of a tufted polyamide-type fiber carpet comprising

5 providing a primary backing tufted with yarn comprised of at least 85% by weight of fibers selected from the group nylon fibers, wool fibers, and blends thereof, said tufted primary backing having a carpet side and an opposite back side,

10 providing a molten polymer adhesive on the back side of the tufted primary backing, said polymer adhesive consisting of at least 85% by weight of one or more ethylene copolymers each comprised of 50 to 95 weight % of ethylene, and 5-50 weight % of at least one comonomer selected from the group of esters and carboxylic acids,

15 compressing said tufted primary backing and said molten polymer adhesive layer under a moving belt that applies a pressure of at least 1 N/cm² for a period of at least 5 seconds during which time the polymer adhesive remains in a molten state,

cooling said molten polymer adhesive to a temperature below the melting point of said molten adhesive.

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2. The process of claim 1 wherein prior to compressing said tufted primary backing and molten polymer adhesive under a moving belt, a secondary backing is placed over the molten polymer adhesive on the back of the primary backing.

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3. The process of claim 1 further comprising the step of introducing the tufted primary backing with the molten polymer adhesive into a nip and compressing molten polymer adhesive into said tufted primary backing in said nip.

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4. The process of claim 1 wherein compressing said tufted primary backing and said molten polymer adhesive layer under a moving belt comprises compressing tufted primary backing and said molten polymer adhesive layer between a moving belt and a rotating heated drum with an

outer heated surface, wherein the heated drum has a diameter of from 1 to 3 meters, the outer heated surface of the drum and the moving belt travel at substantially the same speed in the range of 10 to 30 m/minute, and the surface of the drum is heated to a temperature within the range of 130 to 180 °C.

5 5. The process of claim 4 wherein the belt presses the primary backing against the heated drum with a pressure of from 2 to 10 N/cm².

10 6. The process of claim 2 wherein compressing said tufted primary backing, said molten polymer adhesive layer, and said secondary backing under a moving belt comprises the step of compressing tufted primary backing, said molten polymer adhesive layer and said secondary backing between two moving belts, wherein the moving belts are heated to a temperature within the range of 130 to 200 °C over a distance of 3 to 10 meters, and wherein the two moving belts travel at substantially the same speed in the range of 10 to 30 m/minute.

20 7. The process of claim 6 wherein the two moving belts squeeze the primary backing, the molten polymer adhesive and the secondary backing together under a pressure of from 2 to 10 N/cm².

25 8. The process of claim 1 wherein the extrusion temperature of the molten polymer adhesive is in the range of 150 to 325 °C.

30 9. The process of claim 2 further comprising the step of introducing a reinforcing grid between the back side of the tufted primary backing and the secondary backing prior to compressing said tufted primary backing, said molten polymer adhesive layer, and said secondary backing in said nip.

10. The process of claim 1 wherein the comonomer selected from the group of esters and carboxylic acids consists of vinyl acetate, butyl acrylate, methyl acrylate, methacrylic acid, and acrylic acid.

11. The process of claim 10 wherein the polymer adhesive is a terpolymer containing 50-90 weight % ethylene, 5-20 weight % butyl acrylate, and 5-20 weight % methacrylic acid.

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12. The process of claim 10 wherein at least 20 weight % of the polymer adhesive is a copolymer containing 50-95 weight % ethylene and 5-50 weight % methacrylic acid.

10 13. The process of claim 12 wherein at least 20 weight % of the polymer adhesive is a copolymer containing 50-95 weight % ethylene and 5-50 weight % vinyl acetate.

14. The process of claim 1 wherein the polymer adhesive has a melt
15 index of at least 150 according to ASTM D-1238 @190 °C with a weight of 2.16 Kg.

15 20 15. The process of claim 14 wherein the polymer adhesive has a melt index in the range of 200 to 800 according to ASTM D-1238 @190 °C with a weight of 2.16 Kg.